

REMARKS

Claims 1-3 and 12-18 were pending in the current application. Applicants have amended claims 1 and 17¹ and have canceled claims 14-16 and 18, leaving claims 1-3, 12, 13, and 17. Reexamination and reconsideration of all of the claims are respectfully requested.

35 U.S.C. §112

The Office Action rejected claims 1-3 and 12-18 based on use of the word “it” in claim 1. Applicants have amended claim 1 to correct this error and have separately amended claim 17 to remove use of the word “it.” Applicants submit these were no more than mere oversights or minor errors that have been corrected, and as a result, all claims as amended are worded in an acceptable manner.

35 U.S.C. §102

The Office Action rejected claim 1 under 35 U.S.C. §102(b) based on U.S. Patent 5,403,992 to Cole (“Cole”).

Cole illustrates the heating conductors being coupled together through a diode (D3). The purpose of diode D3 is explained in the paragraphs at Col. 5, l. 52 through col. 6, l. 16. This passage of Cole teaches the exact opposite of the claimed invention, namely that the diode D3 *prevents* equal currents from flowing through the conductors during the negative half of the AC supply cycle.

The passage of Cole noted above states that in normal operation of the blanket, current flows through D3 in the positive half cycle of the mains supply. Diode D3

¹ Applicants note the admonition in the Office Action at p. 4, point 7., that “applicant should show support in the original disclosure for new or amended claims” citing MPEP §714.02 and §2163.06. These MPEP sections deal with addition of new matter –MPEP §2163.06, cited in MPEP §714.02, speaks of the relationship of the written description requirement to new matter added, and has nothing to do with amendments made to claims (unless amendment to the claims adds new matter). Applicants are not adding new matter by amending the present claims, and all claims presented and claim amendments made have support in the specification. Should specific written description rejections issue, Applicants will address them at that time.

connects the two coils R1 and R2 (the two conductors) together at one end of the heating element. When the heating element is operating normally, diode D3 prevents the heating current from passing during the negative half cycles. However, if overheating of the heating element occurs, the insulating thermoplastic layer between coils R1 and R2 melts so as to cause a short circuit between the coils (i.e, the conductors). Cole. Col. 6, ll. 3-8. As a result of this short circuit, a current begins to flow through parts of the coils in both the positive and negative half cycles.

When such a short circuit occurs, diodes D1 and D2 cause the current through the short circuit to be significantly increased during the negative half cycle regardless of where the short circuit has occurred. This result occurs due to effectively splitting R1 and R2 into two separate resistances at the point of the short circuit, such that current can flow in the negative half cycle in opposite directions through R1 from the short circuit in order to reach the live terminal of the mains power supply. The significant increase in current through the negative half cycle results in series fuse F1 blowing.

Claim 1, as amended, requires that if the first and second conductors are connected at the other end of the cable to respective poles of an AC power supply, equal currents flow in opposite directions through adjacent portions of the conductors. This does not and cannot occur in Cole. In Cole, during the negative half cycle, if a leakage current is present, the effect of diodes D1 and D2 is to allow current to flow in opposite directions from the melt point in order to return to the live terminal of the mains supply. That is, in Cole, currents flow in both directions at separate points along R1, however current flows *in one direction only* through R2. Again, the point regarding the diode D3 is that this diode prevents equal currents from flowing through the conductors during the negative half of the AC supply cycle (in combination with diodes D1 and D2 which effectively split one of the conductors, R1, into two portions during the negative half cycle so that currents flow in both directions in the first conductor, R1, and only in a single direction in the second conductor, R2).

Based on the foregoing, claim 1 is novel over Cole for these reasons – Cole does not a design wherein “if the first and second conductors are connected at the other end of the cable to respective poles of an AC power supply, equal currents flow in opposite directions through adjacent portions of the conductors”.

Additionally, claim 1 requires that the separation layer has a negative temperature coefficient and the first conductor a positive temperature characteristic. The Office Action alleges that Cole discloses these features at “column 7, lines 45-50 [PTC characteristic]”, and “column 5, lines 29-37 [NTC characteristic]” (Office Action, p. 3). Applicants submit that these paragraphs do not show the claimed positive temperature characteristic and negative temperature characteristic. The only point within the Cole reference at which a conductor having a positive temperature characteristic is mentioned is in the paragraph at col. 7, l. 44 through col. 8, l. 2. This passage makes clear that temperature sensing of the blanket heating element can be achieved by either making the conductors of a high temperature coefficient alloy and adding suitable resistances in series in order to develop a feedback voltage, or monitoring the leakage current through the insulation. (Cole, col. 7, l. 44 through col. 8, l. 2: “can be achieved by either (i) making R1 and R2 of high temperature coefficient alloys such as pure nickel...or (ii) monitoring the leakage current ...”) That is, D1 makes quite clear that these are separate and distinct alternative approaches to temperature sensing. There is no disclosure of these features in combination.

The standard for maintaining a novelty rejection is identity of invention - in other words, the reference must disclose the claimed invention in as much detail as is recited in the claim. See MPEP 2131; *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (“The identical invention must be shown in as complete detail as is contained in the ... claim.”); see also, *In re Kotzab*, 217 F.3d 1365, 1371, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Applicants submit that a claim that recites: 1. An apparatus comprising: A; B; C; and D is not anticipated by a reference that shows in FIG. 1 an apparatus comprising A and B,

FIG. 2 an apparatus comprising A and C, and FIG. 3 an apparatus comprising A and D. “Concepts do not anticipate. Notions of concept, essence, or gist are no more useful in the context of §102 [the U.S. novelty requirement] than elsewhere, because they divert the factfinder’s attention from the subject matter as a whole.” Harmon, Patents and the Federal Circuit, Sixth Edition, § 3.2a. “It is therefore error to treat the claims as a mere catalog of separate parts, in disregard to part-to-part relationships set forth in the claims that give those claims meaning.” *Id.*

Here, identity of invention is not satisfied; the cited Cole reference does not show a design wherein the separation layer is formed such that the electrical resistance the separation layer provides between adjacent portions of the conductors has a negative temperature characteristic, and the first conductor is formed such that the first conductor has a positive temperature characteristic. Although passages of Cole discuss temperature sensing generally, a design such as that claimed is not shown. Thus identity of invention is not satisfied, and the novelty rejection cannot be maintained. Claim 1, as amended, is thus novel over Cole for this additional reason.

Finally, Cole is primarily concerned with a separation layer which is arranged to melt at a predetermined temperature bringing the two conductors into contact in order to generate a large current to trigger the thermal fuse. Although the possibility of using a high melting temperature PVC, the impedance of which increases with a rise in temperature, is disclosed in the paragraph at p. 5, ll. 29-37, this discussion does not enable one skilled in the art to construct or provide the claimed invention. To substitute such a material into the cable described through the rest of this specification would result in the Cole thermal fuse arrangement no longer working. Specifically, the ability of the thermal fuse to blow in response to an overheating event is caused by a rapid increase in current flowing through the fuse due to the conductors being brought into contact at the melt point. Replacing the separation layer with a material having a negative temperature characteristic would reduce the ability of the thermal fuse to respond in due time to an overheating event.

Applicants therefore respectfully submit that claim 1, as amended, is not anticipated by Cole.

CONCLUSION

In view of the foregoing, it is respectfully submitted that all claims of the present application are in condition for search and Examination. Examination and consideration of all of the claims are respectfully requested and allowance of all the claims at an early date is solicited.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicants believe that no fees are required with the present response. Should it be determined for any reason an insufficient fee has been paid, please charge any insufficiency to ensure consideration and allowance of this matter to Deposit Account 502026.

Respectfully submitted,



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